EXPLANATION OF ECONOMIC ANALYSIS FRAMEWORK

The attached Economic Analysis Framework has been developed by Caltrans as a tool and aid in selecting among the state's "shovel-ready" transportation projects eligible for federal economic stimulus funding. The purpose of this analysis is to include economic factors, both short-term and long-term, into the decision-making thought process. This comparative analysis will assist Caltrans in choosing among eligible projects, because there are not sufficient funds for all eligible projects. The short-term economic benefits, principally construction jobs, are certainly important. However, we also want to keep sight of the long-term economic benefits—such as increased mobility and productivity that lead to greater economic activity—resulting from transportation investments.

While we recognize that there may not be as much data available for some potential projects as for others and that qualitative evaluations will have to be made, we encourage local and regional jurisdictions to consider using some version of this analysis and thought process when fashioning their stimulus programs. Instructions and documentation of the methodology and model used for this economic analysis can be accessed at http://www.dot.ca.gov/hq/tpp/offices/ote/benefit.html. For further information on the model, you may contact Caltrans economist Mahmoud Mahdavi at (916) 653-9525, or by email at Mahmoud.mahdavi@dot.ca.gov.

#	Dist	County	Route	Project Description	Project Cost ($1000s)	Constr. Start Date	Duration of Construction (Months)	Jobs (Constr. Cost x multiplier) (Constr. Period)	Productivity Gain ($1000s/Year) (Long-term)	Productivity Gain/Cost Index (20-years)	Annual Tax Revenues (Income & Sales Tax, $1000s) (Constr. Period) (Long-term)	Hwy User B/C Ratio (20-years)	Other Benefits

Economic Analysis Framework

NOTES:

Project Cost	Project cost includes support, right-of-way, construction, and mitigation. Job creation estimates are based on the construction cost only.
Jobs	Cumulative jobs generated throughout the economy as a result of the project construction cost (capturing the multiplier effects). According to IMPLAN Model, one billion dollars in transportation construction cost on average would support a total of 18,000 equivalent full-time jobs in the state, mostly during the construction period.
Productivity Gain	Improved mobility (travel time savings) reduces cost of travel/shipments and business activity and increased productivity. The improved business profitability in turn promotes business expansion, job creation, income generation, etc. These longer-term economic development benefits are estimated as value added to the Gross State Product (GSP). Productivity Gain (or Value added to GSP) is the opportunity cost of time lost in traffic congestion, and is based on a 20-year post-construction average. It is calculated using estimated project's average annual travel time savings monetized at the state's average productivity or output per hour of labor ($54).
Productivity Gain/Cost Index	Expected 20-year Productivity Gains (or value added to GSP) divided by total project cost (discounted to account for time-value of money and adjusted for inflation). The index indicates relative economic merit (or return) per dollar spent; the higher the index, the better the project would be in terms of longer-term economic benefits. For example, an index of 2.6 means one dollar (or $100 million) spent today will add $2.6 (or $260 million) to the GSP over the next 20 years due to improved mobility. Index = Productivity Gain per year x 13.5 real discount factor /total project cost.
Tax Revenues	Short-term Tax Revenues = Payroll (jobs generated X $45,000 State's average annual labor earnings) X 8.5% (which is the state's average income and sales tax per $1 of income per DOF). Long-term Tax Revenues = annual productivity gain (or value added to GSP) at the State's average income and sales tax rates.
Highway User B/C Ratio	Benefit-Cost Ratio is present value of monetized system efficiency gains (travel time savings, accident reductions or safety benefits, vehicle operating cost savings, and vehicle emission reductions) divided by present value of total project costs, estimated using the Department's Cal-B/C Model. The B/C Ratio indicates expected benefits over 20 years for each dollar spent.

Cal-B/C Model, instructions and documentation can be accessed at http://www.dot.ca.gov/hq/tpp/offices/ote/benefit.html